

## **REMARKS**

In the Office Action, the Examiner objected to claims 1-4; rejected claims 3-5, 34, and 37-39 under 35 U.S.C. § 112, first paragraph; rejected claims 1-5 and 34-39 under 35 U.S.C. § 112, second paragraph; and rejected claims 1, 2, 35, and 36 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,306,940 to Yamazaki ("Yamazaki").

By this amendment, Applicants have amended claims 1-4, 38, and 39. Claims 1-5 and 34-39 remain pending in this application.

### **I. Rejections under 35 U.S.C. § 112, first paragraph**

Regarding the Examiner's rejection of claims 3-5, 34, and 37-39 under 35 U.S.C. § 112, first paragraph, the Examiner appears to be asserting that the element "said gate insulating film is formed on a top surface and sides of the semiconductor layer in said element regions which are not covered with said element isolating insulating film," as recited in claim 3, does not meet the written description requirement of the first paragraph of 35 U.S.C. § 112. Applicants respectfully traverse this rejection, and assert that claim 3 fully complies with the statute and with USPTO guidelines as specified by the MPEP.

According to MPEP § 2163.02, 8th Ed. (Rev. 2), May, 2004, in order to satisfy the written description requirement of 35 U.S.C. § 112, first paragraph:

an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed. An applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as *words*, *structures*, *figures*, *diagrams*,

and formulas that fully set forth the claimed invention ...  
[p]ossession may be shown in a variety of ways  
including ... *the disclosure of drawings*. (Internal citations  
omitted) (emphasis added).

Accordingly, the written description requirement can be satisfied by having described the claimed invention through “words” or “drawings.” Here, claim 3 as originally filed, recites the element “said gate insulating film is formed on a top surface and sides of the semiconductor layer in said element regions which are not covered with said element isolating insulating film.” This constitutes adequate description in words, such that one skilled in the art would have known Applicants were in possession of the invention. Moreover, the Examiner states:

said gate insulating film being formed on a top surface and  
sides of the semiconductor layer in said element regions  
which are not covered with said element isolating insulating  
film as ... in fig. 12. Office Action, page 2.

The Examiner further states:

[f]ig. 19B discloses said gate insulating film [73] is formed on  
a top surface and sides of the semiconductor layer [71] in  
each of said element regions which is not covered with said  
element insulating isolating film [72]. Office Action, page 3.

Contrary to the rejection, both of these statements by the Examiner indicate that Figures 12 and 19B both describe “said gate insulating film is formed on a top surface and sides of the semiconductor layer in said element regions which are not covered with said element isolating insulating film,” as recited in claim 3. Accordingly, there is sufficient description in the figures such that one skilled in the art would have known that Applicants were in possession of the invention.

Moreover, Fig. 26, added in the amendment filed September 7, 2004, clearly shows “gate insulating film” 63 “formed on a top surface and sides of the semiconductor layer” 61 in the “element isolation regions which are not covered” with the “isolating insulating film” 62, as recited in claim 3. This is further supported in the specification, as originally filed at, for example, the paragraph beginning on page 59, line 2. Accordingly, Applicants respectfully request that the rejection of claims 3-5, 34, and 37-39 under 35 U.S.C. § 112, first paragraph, be withdrawn.

**II. Objections to the claims**

Regarding the Examiner’s objections to claims 1-4 for various informalities, the Examiner asserts that claims 1-4 contain elements which lack antecedent basis. Applicants submit that the amendments to claims 1-4 correct any antecedent basis problems. Accordingly, Applicants respectfully request that the objections to claims 1-4 be withdrawn.

**III. Rejections under 35 U.S.C. § 112, second paragraph**

Regarding the rejection of claims 1-5 and 34-39 under 35 U.S.C. § 112, second paragraph, the Examiner is apparently asserting that certain recitations of “said element regions,” as recited in claims 1-3, 38, and 39, are vague and indefinite. Although Applicants disagree with the Examiner’s assertions, in order to expedite prosecution, Applicants have amended claims 1-3, 38, and 39 to address the Examiner’s concerns. Accordingly, Applicants respectfully request that the rejection of claims 1-5, and 34-39 under 35 U.S.C. § 112, second paragraph, be withdrawn.

**IV. Rejections under 35 U.S.C. § 102(b)**

Regarding the Examiner's rejection of claims 1, 2, 35, and 36 under 35 U.S.C. § 102(b), Applicants respectfully disagree with the Examiner's conclusions and assertions as set forth in the outstanding Office Action<sup>1</sup>. Accordingly, Applicants respectfully traverse this rejection.

In order to properly anticipate Applicants' claimed invention under 35 U.S.C. §102, each and every element of the claim in issue must be found, "either expressly or inherently described, in a single prior art reference." "The identical invention must be shown in as complete detail as is contained in the . . . claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)." See MPEP § 2131, 8th Ed. (Rev. 2), May, 2004.

Independent claims 1 and 2 recite a combination including a recitation that "said element isolating insulating film and each of said element regions make an interface which is substantially perpendicular to the top surface of said semiconductor layer." Yamazaki fails to teach at least this element. The Examiner alleges that Yamazaki teaches "field oxide 110 (as shown in Figs. 8A-8F) constitutes the "element isolating insulating film," that field oxide 110 further "partition[s] said semiconductor layer into a plurality of element regions," and "said element isolating insulating film [110] and each of said element regions make an interface which is substantially perpendicular to the top surface of said semiconductor layer." Office Action, pages 4-5. Contrary to the

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<sup>1</sup> The Office Action contains a number of statements reflecting characterizations of the related art and the claims. Regardless of whether any such statement is identified herein, Applicants decline to automatically subscribe to any statement of characterization in the Office Action.

Examiner's allegation, oxide film 110 and the element regions make an interface which is **not** perpendicular to the top surface of said semiconductor layer, as shown in Fig. 8F. As further described below, oxide film 110 and element regions make an interface which is oblique to the top surface of the semiconductor layer 103 due to the angled sides of oxide film 110. Accordingly, even if the Examiner's characterization of Yamazaki can be considered correct, Yamazaki fails to teach at least the element "said element isolating insulating film and each of said element regions make an interface which is substantially perpendicular to the top surface of said semiconductor layer," as recited in independent claims 1 and 2.

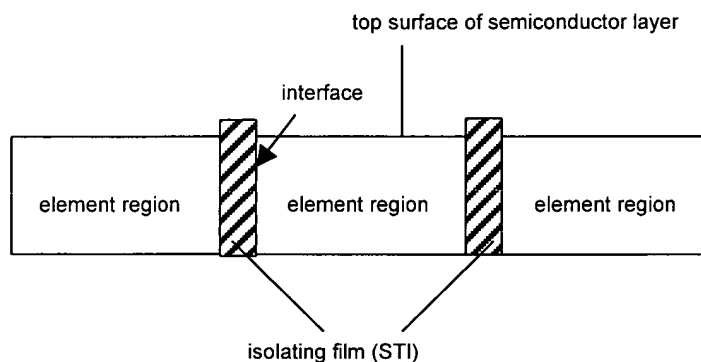
Moreover, this difference is further supported because the combination recited in claims 1 and 2 of the present application and Yamazaki differ in isolation. The isolation of claims 1 and 2 is shallow trench isolation (STI), supported by the following elements in claims 1 and 2. That is, claims 1 and 2 recite a combination including "an element isolating insulating film is provided in a trench for partitioning a semiconductor layer into a plurality of element regions, and the element isolating insulating film and each of the element regions make an interface which is substantially perpendicular to the top surface of the semiconductor layer."

The Examiner asserts that Yamazaki discloses "a trench" as recited in claims 1 and 2. Office Action, page 4. Even if "any surface that is formed below a top surface of a layer" can be considered "a trench," as asserted by the Examiner at page 6 of the Office Action, Yamazaki fails to teach that "an element isolating insulating film and each of element regions make an interface which is substantially perpendicular to the top surface of a semiconductor layer," as recited in claims 1 and 2.

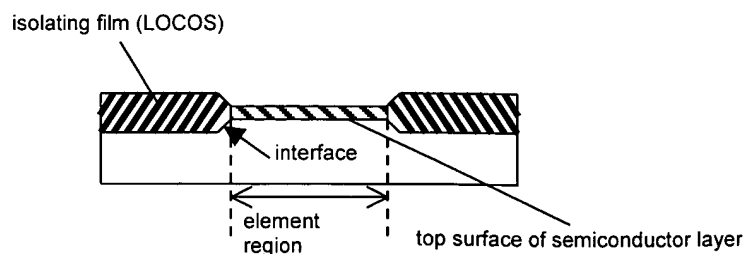
In other words, in claims 1 and 2 , which utilizes STI, the interface made by the element region and an element isolating film is substantially perpendicular to the top surface of the semiconductor layer, whereas in Yamazaki, which utilizes local oxidation of silicon (LOCOS), the interface is never perpendicular to the top surface of the semiconductor layer, as is illustrated in the following Reference Figures.

### Reference Figures

#### Claims 1, 2



#### Yamazaki



Since Yamazaki fails to teach each and every element of independent claims 1 and 2, that reference cannot anticipate independent claims 1 and 2. Accordingly, Applicants respectfully request that the rejection of claims 1 and 2 under 35 U.S.C. § 102(b) be withdrawn.

Claim 35 and claim 36 respectively depend from independent claims 1 and 2, and therefore require all of the respective elements of independent claims 1 and 2. Since Yamazaki fails to teach each and every element of independent claims 1 and 2, that reference also fails to teach each and every element required by the dependent claims. Accordingly, Applicants respectfully request that the rejection of claims 35 and 36 under 35 U.S.C. § 102(b) be withdrawn.

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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Dated: July 21, 2005

By:

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